

REMARKS

Claims 1-54 were originally pending in the application. Claims 24-54 have been withdrawn without prejudice. Claims 1-23 are rejected, and claim 24 is objected to. Claims 1, 10, 22, and 23 have been amended. New claims 55-106 have been added. Claims 1-23 and 55-106 are now pending. Favorable reconsideration and allowance of this application is respectfully requested in light of the claim amendments and the following remarks.

I. Interviews

Applicant appreciates the Examiners' time and courtesy in conducting the telephone interviews with Applicant on April 30, 2004 and September 12, 2004, and the in-person interview on October 19, 2004.

During the April 30 interview, the Examiner confirmed that the primary reference cited in the Office Action was U.S. Pat. No. 4,035,552 instead of the Pat. No. 4,034,552 identified in the Office Action. Furthermore, Applicant and Examiner agreed that the recitation of a flexible grommet in the specification provides proper antecedent basis for "a flexible member" as recited in some of the claims.

During the September 12, 2004 interview, Applicant and the Examiner discussed independent claims 1, 23, 55, 67, 75, 82, 91, and 99 in view of the Epstein, Vu, and Belove. During the October 19, 2004 interview, Applicant and the Examiner discussed independent claims 1, 23, 55, 67, 75, 82, 91, 99, and 105 in view of the Epstein, Vu, and Belove.

Applicant and the Examiner agreed that the independent claims appeared to distinguish over the cited prior art, and that the Examiner would update the prior art search prior to a potential Notice of Allowance.

The Examiner agreed to contact the undersigned at the telephone number below if any remaining issues need to be addressed in light of this communication.

II. Drawings

The drawings were objected to because the lead line from reference sign "28" in Fig. 2A leads to a different structure than that in Fig. 2B. Fig. 2A has been revised to properly identify the annular contact by reference numeral "28" in a manner consistent with Fig. 2B.

An annotated marked-up Fig. 2A is enclosed with the change identified in red ink. A Formal Sheet 2 bearing Fig. 2A incorporating the above drawing change is also enclosed for approval by the Examiner.

IN THE DRAWINGS:

An annotated marked-up Fig. 2A is enclosed showing changes to reference numeral "28" in red ink.

A Formal Drawing Sheet 2 bearing Fig. 2A is also enclosed incorporating the above-drawing change.

Applicant also encloses as a courtesy a copy of formal Drawing Sheet 3 bearing Fig. 2B as amended in the October 28, 2002 correspondence discussed during the interview. If amended Fig. 2B has not already been entered into the application, Applicant respectfully requests that Fig. 2B be added at this time.

Withdrawal of the objection to the drawings is respectfully requested.

III. Specification

During the October, 2004 interview, Applicant and the Examiner discussed paragraphs 70 and 71 of the specification, which have been amended above. Specifically, Paragraph 70 has been amended to delete reference numeral "13" and Paragraph 71 has been amended to delete reference numeral "29".

In the Office Action, the disclosure is objected to because of the following informalities, each of which addressed in-turn below:

Page 8, line 20, an extra period after "threshold". Paragraph 28 has been amended to remove the additional period.

Page 12, line 9, the second occurrence of "open" should be "closed". Paragraph 68 has been amended accordingly.

Page 13, line 2, the word "has" is superfluous. Paragraph 70 has been amended to delete "has".

Page 33, line 26, "the" should be deleted before "rate". Paragraph 139 has been amended accordingly.

Applicant appreciates the Examiner's review of the specification, and submits that the above-amendments overcome the above-objections to the specification. Withdrawal of the objections is therefore respectfully requested.

The specification is objected to in Paragraph 12 of the Office Action as failing to provide proper antecedent basis for the claimed subject matter. In particular, the specification allegedly fails to provide proper antecedent basis for the instantly claimed "a flexible member". As discussed above, Applicant and the Examiner agreed that "a flexible member" is supported by the recitation of a flexible grommet in the specification. Applicant directs the Examiner's attention to Paragraph 70, which recites a "flexible non-conductive mono-stable grommet 22" (See Also Figs. 2A and 2B). Moreover, paragraph 91 of the specification states "The grommet 114 may be formed of any material that does not negatively interact with the chemistry of the cell but which is sufficiently flexible to move in response to a pressure increase..." (See Also Fig. 6).

Accordingly, Applicant asserts that the presently claimed “flexible member” is supported, and rendered definite, by the specification. Withdrawal of the objection is respectfully requested.

IV. Claim Objections

Claim 10 is objected to because line 5 presents a semicolon instead of a period. Claim 10 has been amended accordingly. Withdrawal of the objection to claim 10 is respectfully requested.

V. Claim Rejections Under 35 U.S.C. §102

Claims 1-3, 5, 7-8, and 15-21 are rejected under 35 USC 102(b) as being anticipated by Epstein.

Claim 1 has been amended, and broadened in some respects. For instance, element (a) is no longer specific to the electrode disposed in the cavity and the flexible member is supported by the can. Claim 1 further recites a first conductive element in communication with the terminal end cap, and a second conductive element in electrical communication with the electrode. The claimed first conductive element is thus analogous to Epstein’s bimetal strip 30, and the claimed second electrode is analogous to Epstein’s pin 32. Claim 1 further recites a flexible member that biases the second conductive element out of communication with the first conductive element. Epstein does not bias pin 32, but rather biases bimetal strip 30. Epstein furthermore fails to teach or suggest biasing pin 32, which extends through the glass-to-metal seal 35.

As discussed above, Vu’s flexible diaphragm 70 does not bias one contact away from the other, but rather Vu’s flexible member *provides* one of the contacts.

Accordingly, independent claim 1 differs both structurally and functionally from the cited prior art, even when combined. Withdrawal of the rejection of claim 1 and corresponding dependent claims 1-3, 5, 7-8, and 15-21 is therefore respectfully requested.

VI. Claim rejections under 35 USC 103

Claim 4, is rejected under 35 USC 103 in view of Epstein. Claims 6 and 10-14 are rejected under 35 USC 103 in view of Epstein and Belove. Claim 9 is rejected under 35 USC 103 as being unpatentable over Epstein and Vu. Claim 22 is rejected under 35 USC 103 as being unpatentable over Epstein and Horn.

Applicant asserts the patentability of independent claim 1 as providing sufficient basis for the allowability of dependent claims 4, 6, 9-14, and 22. Allowance of claims 4, 6, 9-14, and 22 is therefore respectfully requested.

VII. Additional Claim Amendments

Claim 22 has been amended for the purposes of form and clarity, and in particular to recite a positive and negative electrode, and a gas-impermeable separator disposed between the positive and negative electrodes.

VIII. Allowable Subject Matter

Applicant notes with appreciation that claim 23 has been found to contain patentable subject matter. Claim 23 has been written in independent form incorporating the limitations of base claim 1 from which claim 23 originally depended. Accordingly, formal allowance of claim 23 is respectfully requested.

IX. New Claims

Applicant has added new independent claim sets 55-66, 67-74, 75-81, 82-90, 91-98, and 99-104. Each of these claim sets is discussed below.

1. Claims 55-66

Independent claim 55 recites first and second contacts and a flexible member, in addition to both contacts, that, in response to an elevated internal cell pressure, flexes and *directly biases* one of the contacts away from the other to break the electrical path (italics added for emphasis). As discussed during the interviews, the cited prior art, both alone and in combination, fails to teach or suggest at least this claim limitation. For instance, Epstein's diaphragm 34 does not directly bias bimetal strip 30. Furthermore, Vu's flexible diaphragm 70 does not bias one contact away from the other, but rather Vu's flexible member *provides* one of the contacts.

Formal allowance of independent claim 55 and corresponding dependent claims 56-66 is therefore respectfully requested.

2. Claims 67-74

New independent claim 67 recites a nonconductive flexible member *extending radially inwardly from the outer can*, and first and second contacts in removable electrical communication with each other to form an electrical path between the terminal end cap and the electrode (italics added for emphasis). As discussed in the interviews, the cited prior art,

both alone and in combination, fails to teach or suggest at least this claim limitation. Formal allowance of independent claim 67, and corresponding dependent claims 68-74, is respectfully requested.

3. Claims 75-81

Independent claim 75 recites a *flexible grommet* extending radially inwardly from the can, wherein the grommet flexes from a first position to a second position in response to an elevated internal cell pressure to break the electrical path (*italics added for emphasis*). As discussed during the interviews, no cited document teaches or suggests a grommet extending radially inwardly from the can that controls an in-cell pressure-responsive switch. For instance, Epstein's diaphragm 34 is a plate, and not a grommet within the conventional meaning of the word "grommet" as understood in the art. Vu's diaphragm 70 is also not a grommet (and is distinguished in Vu from grommet 25). While Belove teaches a grommet extending inwardly from the can, Belove's pressure-responsive switch is disposed outside the cell, thereby teaching away from Epstein and Vu.

Accordingly, the cited prior art, both alone and in combination, fails to teach or suggest at least this claim limitation. Formal allowance of independent claim 75, and corresponding dependent claims 76-81, is therefore respectfully requested.

4. Claims 82-90

New independent claim 82 recites a flexible member extending radially inwardly from an axially extending portion of the outer can to divide the internal chamber into an active cell cavity housing the electrode, and a switching cavity that houses a first and second contact. No cited document teaches or suggests this claim limitation. To begin, no cited prior art document teaches a flexible member extending radially inwardly from an axially extending portion of the outer can in a cell having an internal pressure-responsive switch. For instance, Belove fails to disclose an internal pressure-responsive switch. In Epstein, the flexible diaphragm 34 extends from a *radially* extending portion of the can as opposed to the presently claimed axially extending portion. In Vu, the flexible diaphragm 70 extends from grommet 25, and not outer can 30. Accordingly, the cited documents, if combined, fail to teach or suggest all limitations of claim 82. As noted in the October 19 interview, Applicant and the Examiner agreed that "axially extending portion" is to be construed broadly to include any portion of the outer can having an axially extending component (e.g., a crimped can portion).

Formal allowance of independent claim 82, and corresponding dependent claims 83-90, is therefore respectfully requested.

5. Claims 91-98

Independent claim 91 recites a pressure-responsive flexible member in addition to the contacts that becomes displaced in response to an elevated internal cell pressure and, in turn, displaces one of the contacts a distance substantially equal to the displacement of the flexible member to break the electrical path. As discussed during the interviews, none of the cited prior art documents teach or suggest this claim limitation. To begin, Epstein's flexible diaphragm 34 biases bimetal strip 30, via lever 36, a distance greater than the displacement of diaphragm 34 (Col. 4, lines 34-38). Furthermore, Vu's diaphragm 70 is not provided in addition to the contacts, as claimed, but rather *is* one of the contacts. Moreover, Belove does not bias a contact disposed in the cell.

Formal allowance of independent claim 91, in addition to dependent claims 92-98, is therefore respectfully requested.

6. Claims 99-104

Independent claim 99 recites a rechargeable electrochemical cell including an outer can defining an internal chamber having an open end that is closed by a terminal end cap. An end cap assembly includes first and second contacts in removable electrical communication with each other to form an electrical path between the terminal end cap and the electrode, and a flexible member, in addition to the contacts, that breaks the electrical path when flexed. The outer can is crimped about an outer portion of the flexible member to provide a seal at the open end.

No cited document teaches or suggests these claim limitation. As discussed in the telephone interview, Belove's flexible member 51 does not break an electrical path formed by an in-cell switch contact. As discussed in the October 19 interview, Epstein's cell is not crimped about the flexible diaphragm 34 but, rather, is hermetically sealed. Vu also differs from the invention recited in claim 99 because, for instance, Vu's diaphragm 70 *is* one of the contacts and therefore is not provided in addition to the contacts as claimed.

Formal allowance of independent claim 100, and corresponding dependent claims 101-104, is therefore respectfully requested.

7. Claims 105-106

Independent claim 105 recites a rechargeable electrochemical cell including an outer can extending along a centrally disposed axis. Claim 105 further recites a flexible member extending from the can and symmetrically disposed about the axis, wherein the flexible member flexes from a first position to a second position in response to an elevated internal cell pressure to urge one of the contacts away from the other and break the electrical path.

As discussed in the October 19, 2004 interview, none of the cited prior art documents teach or suggest at least these claim limitations. Formal allowance of independent claim 105 and corresponding dependent claim 106 is therefore respectfully requested.

X. Conclusion

Applicant therefore respectfully asserts that all rejections and objections cited by the Examiner have been overcome. Accordingly, the application is in condition for allowance, and a Notice of Allowance is earnestly solicited.

Applicant had already paid for the examination of nine independent claims (i.e., claims 1, 24, 32, 33, 34, 41, 46, 47, and 53). All but claim 1 has been withdrawn from consideration. Accordingly, the addition of eight independent claims by way of this amendment (i.e., claims 23, 55, 67, 75, 82, 91, 99, and 105) leaves nine independent claims pending. Accordingly, no fees should thus be due for the addition of these independent claims. Furthermore, applicant had already paid for thirty-one total claims greater than twenty that are now withdrawn from consideration (i.e., claims 24-54). Accordingly, the addition of fifty-two (52) new claims leaves twenty-one (21) greater than the total number of claims already paid for.

Applicant therefore hereby authorizes the Commissioner to charge the \$1358 fee for the addition of twenty-one (21) additional claims in excess of twenty (\$378) and a three-month extension of time (\$980) along with any additional fees that are deemed due arising from this or any other communication, to deposit account No. 17-0055. The Examiner is invited to contact the undersigned at the telephone number appearing below if such would advance the prosecution of this application.

Respectfully submitted,

William C. Bushong, et. al.

By: Adam J. Forman
Adam J. Forman
Reg. No. 46,707
Attorney for Applicant
Quarles & Brady
411 E. Wisconsin Avenue, Suite 2040
Milwaukee WI 53202-4497
(414) 277-5405



ANNOTATED

2 / 20

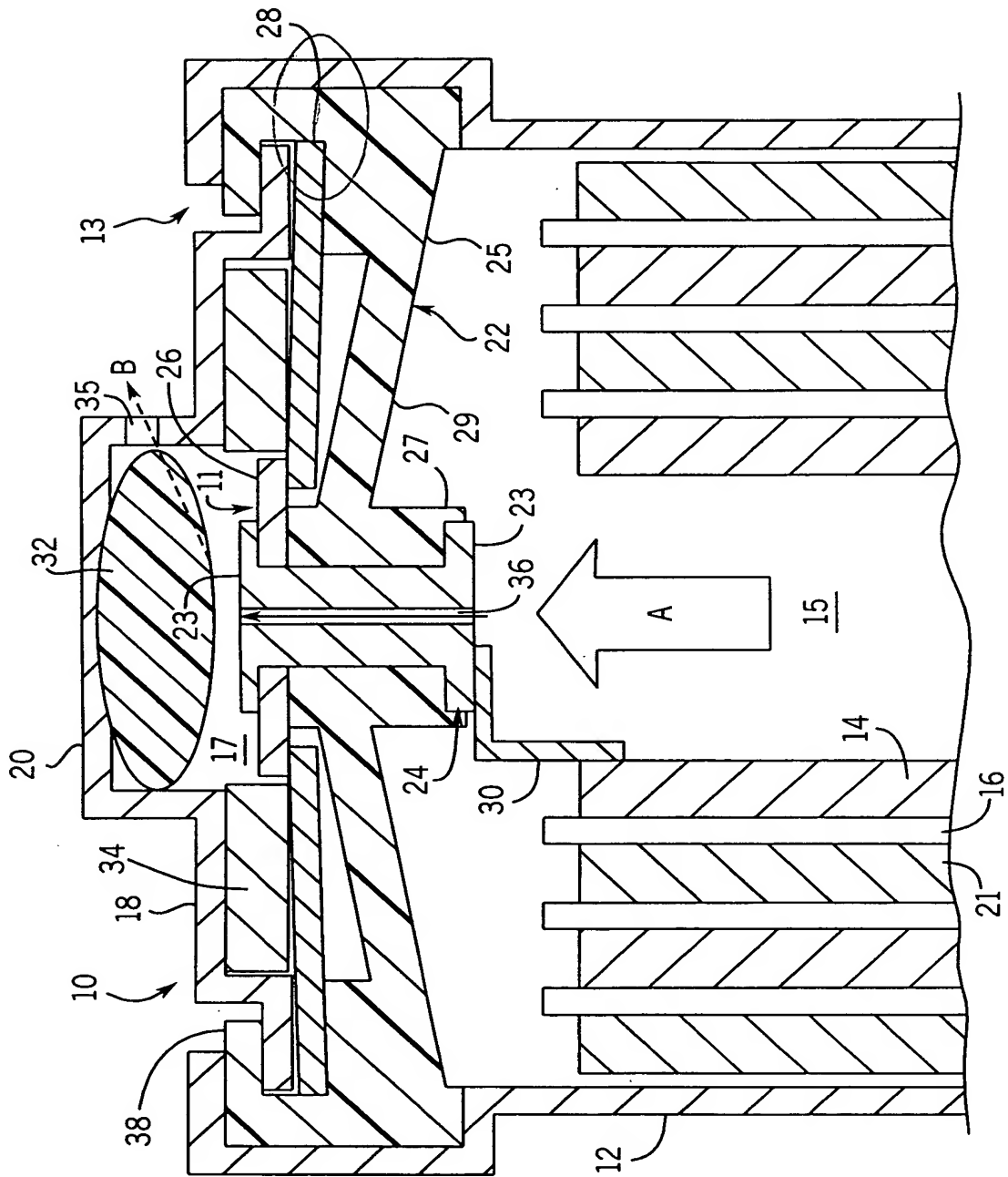


FIG. 2A